

# **Validation of Virtual Crane Behavior through Comparison with a Real Crane**

**ABSTRACT:** A module has been developed for virtual assembly systems allowing them to more realistically simulate heavy machinery assembly. The module provides a virtual overhead crane for manipulating heavy assembly components and physically based motion of components attached to the crane. This paper shows validation of the heavy machinery virtual assembly module by performing real world tasks in the virtual environment. More importantly, it compares the simulated motions of the crane and attached load in the virtual environment with motions of a real crane and attached load. The results show a correlation between the virtual and real world for the crane velocity and acceleration, as well as angular displacement and damped motion of the attached load due to crane acceleration.